

Application No. 09/661,986
Amendment dated November 14, 2003
Reply to Office Action of August 27, 2003

REMARKS/ARGUMENTS

Applicants wish to thank the Examiner for considering the present application. In the Office Action dated August 27, 2003, Claims 1-24 are pending in the application. Applicants respectfully request the Examiner for reconsideration. Claims 2 and 15 have been herein amended to improve form. These changes are believed to be cosmetic changes and not narrowing amendments.

Claims 1-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Perahia et al* (6,188,896) in view of *Han* (4,343,005). Applicants respectfully traverse.

Claim 1 is directed to a method of preventing interference in a communications system that includes generating a fixed reuse pattern in a service area from a high altitude communication device with the pattern having at least a first resource cell and a second resource cell. The method further includes the step of selectively suppressing a side lobe of a beam having a first resource to form a suppressed portion and a non-suppressed portion so that the non-suppressed portion aligns with the second resource cell.

The Applicants agree with the Examiner's assessment that the *Perahia* reference does not teach selectively suppressing a side lobe of a beam. Applicants, however, disagree with the Examiner's assessment that *Han* teaches that side lobe patterns can be successfully suppressed by careful antenna design to permit reuse of resources. The Examiner points to Col. 5, lines 24-27, for this proposition. Applicants have reviewed the entire paragraph beginning on line 21 of Col. 5. Although the passage states that careful antenna design may permit reuse in respective hemispheres of a given frequency channel, the method used for reuse is different than that of the present application. Beginning on line 31 of Col. 5, the *Han* reference describes using a 4 GHz signal having lefthand circular polarization in coverage area 46 which appears to be mostly North America while at the same time using a lesser intensity 4 GHz signal for the coverage area by pattern 44 which appears to cover a better portion of South America. While these

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two signals are used adjacent to each other, they use a different resource, namely, a 4 gHz signal with different polarizations. From a properly designed antenna (on the ground), excellent rejection of cross-polarization may be obtained. As stated on page 9 of the present application, "By relaxing requirements on the side lobe, better main lobe performance may be achieved with an antenna design that requires side lobe suppression for all beams." Side lobes have been uniformly suppressed for each beam of previous systems. What is not shown in the *Han* reference is "selectively suppressing a side lobe" as recited in Claims 1 and 9. As recited in Claim 1, for example, the portion that is not suppressed aligns with the second resource cell (which does not have the same communication resource as the first cell). As recited in Claim 2, the step of selectively suppressing comprises the step of reshaping the antenna to suppress the side lobe interference at the interference locations.

Claim 15 recites selectively reshaping the antennas to selectively suppress interference at the interference locations.

Claim 21 recites performing side lobe suppression only for beams using a same communication resource. Thus, even if the two references are combined, the present invention cannot be formed. The *Perahia* reference and the *Han* reference do not teach selectively suppressing side lobes.

Claims 2-8, 10-14, 16-20, and 22-24, which depend directly or indirectly from independent Claims 1, 9, 15, or 21, are also believed to allowable for generally the same reasons discussed above and further due to the additional limitations therein.

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In light of the above amendments and remarks, Applicants submit that all rejections are now overcome. Applicants have added no new material to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments which would place the application in better condition for allowance, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

Vijayalakshmi D. Duraiswamy
Vijayalakshmi D. Duraiswamy
Reg. No. 31,505

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HUGHES ELECTRONICS CORPORATION
RE/R11/A109
P. O. Box 956
El Segundo, CA 90245-0956
Telephone: (310) 964-0733